REMARKS

Claims 1-6 are pending in this application and claims 3 and 4 are withdrawn. By this Amendment, claims 1 and 5 are amended. No new matter has been added.

Support for the amendments to claims 1 and 5 is found, for example, on page 7, line 26-page 8, line 2.

Applicants respectfully submit that the finality of the Office Action should be withdrawn because due consideration was not given in the Office Action to the arguments presented in the July 22, 2003 Amendment that neither Hara, nor Babayan, nor their combination discloses a CVD system with a cleaning gas feeder provided to the plasma generator, wherein the film is deposited on the substrate within the same chamber as the substrate is not moved, as recited in claims 1 and 5.

In other words, claims 1 and 5 claims a CVD system with a plasma generator that has structures that feed a cleaning gas to the plasma generator, as well as structures that feed a material gas. By having such structures, a film can be deposited on the substrate after the substrate is cleaned within the same chamber, without requiring movement of the substrate to another chamber.

Hara discloses a plurality of chambers such as a CVD chamber C_1 for forming an insulating film, a CVD chamber C_2 for forming an amorphous silicon thin film, a laser annealing chamber C_3 for forming a polycrystalline silicon thin film from the amorphous silicon thin films, and a robot chamber C_4 containing a robot arm to transport the samples from one to another of the chambers (col. 6, line 57-col. 7, line 5). Thus, in Hara, the samples must be moved between the chambers for processing. Therefore, Hara lacks the structures for feeding a cleaning gas.

In fact, Hara discloses a pre-cleaned glass wafer 1 that has been previously ultrasonically cleaned (See column 7, line 55, column 8, lines 48-58, column 13, lines 10-20).

That is, Hara discloses that the pre-cleaned glass wafer 1 is introduced, rather than having a CVD system with a cleaning gas feeder to clean the substrate.

It is noted on page 3 of the Office Action that Hara discusses plasma cleaning as a step prior to forming the gate insulating film. The cited passage of Hara (col. 13, lines 9-20) discloses that plasma hydrogenation of the polycrystalline thin film may be performed in a hydrogenation chamber C_5 while the surface of the thin film is kept clean. This and the other cited passages in Hara merely disclose keeping the polycrystalline thin film clean while transferring the thin film between chambers for forming an insulating film, an amorphous silicon thin film, or for laser annealing the thin film. However, the cited passages do not suggest a CVD system with a plasma generator that has structures that feed a cleaning gas to the plasma generator. Therefore, Hara fails to disclose a CVD system with a cleaning gas feeder provided to the plasma generator, wherein the film is deposited on the substrate within the same chamber as the substrate is not moved, as recited in claims 1 and 5. Babayan fails to overcome this deficiency in Hara.

Second, Applicants respectfully submit that the finality of the Office Action should be withdrawn because due consideration is not given in the Office Action to the arguments that neither Hara, nor Babayan, nor their combination discloses a CVD system...with introduction holes of a lower plate...each of the introduction holes is designed to pass the radicals only to the film deposition chamber, as recited in claims 1 and 5.

In the Office Action, one of Hara's deficiency is acknowledged, wherein it is stated that "Hara does not teach that the lower plate (lower half of "ME") is connected to the grounds thereby allowing only radicals to pass." However, it is asserted that "Babayan teaches a capacitively coupled plasma apparatus (Figure 1)," and both an "upper (26,28) and lower (22) electrodes as grounded ([0042]) thereby allowing only radicals to pass ([0039])."

The perforated sheets 26 and 28 of Babayan are multi-hole sheet members connected to the ground to supply gas to the electrodes 18 and 24 with an excellent distribution, i.e., make the gas flow uniformly down through the cavity (paragraph [0042]). Therefore, the perforated sheets 26 and 28 plays no role in preventing passage of plasma, or the passing of only the radicals. Therefore, Babayan fails to provide for the deficiency in Hara.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution; (c) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (d) place the application in better form for appeal, should an appeal be necessary.

The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the Final Rejection. Entry of the amendments is thus respectfully requested.

For at least the following reasons, Applicants submit that this Application is in condition for allowance. Favorable reconsideration is respectfully requested.

I. Claims Define Allowable Subject Matter

On page 2, item 3 of the Office Action, claims 1, 2, 5 and 6 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,648,276 to Hara et al. (hereinafter "Hara"), in view of U.S. Publication No. 2002/0129902A1 to Babayan et al. (hereinafter "Babayan"). The rejection is respectfully traversed.

In addition to the above discussed patentable features, neither Hara, nor Babayan, nor their combination discloses a CVD system provided with a plasma generator comprised of a conductive upper and lower plates and a circumferential wall made of an insulator, as recited in amended independent claims 1 and 5.

Hara discloses in Fig. 3, that the entire CVD chamber is assembled out of stainless steel outer wall SW and quartz outer wall QW (col. 7, lines 11-15). However, Hara fails to disclose a plasma generator, as recited in claims 1 and 5. Babayan discloses a housing 30 and a grounded side wall 19. However, Babayan fails to disclose a plasma generator, as recited in claims 1 and 5.

Consequently, neither Hara, nor Babayan, nor their combination discloses all of the recited features of claims 1 and 5. Therefore, claims 1 and 5 are patentable over the applied references. Claims 2 and 6, which depend from claim 1, are likewise patentable over the applied references for at least the reasons discussed above and for the additional features they recite. Withdrawal of the rejection of claims 1, 2, 5 and 6 is respectfully requested.

Furthermore, based on the claimed features that were not properly addressed in the Office Action, the finality of the Office Action should be withdrawn, and the claims allowed.

II. Conclusion

For the reasons stated above, Applicants submit that this Application is in condition for allowance. Favorable reconsideration and prompt allowance is respectfully requested.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:SSK/jfb

Attachment:
Petition for Extension of Time

Date: February 9, 2004

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